CLAIMS:

1. A plasma etching process comprising:

forming a carbon containing material over a semiconductor substrate; and

plasma etching the carbon containing material from the substrate at a temperature of at least 400°C using a hydrogen or oxygen containing plasma.

2. The plasma etching process of claim 1 wherein the temperature is at least 600°C.

3. The plasma etching process of claim 1 wherein the plasma contains hydrogen and oxygen.

4. The plasma etching process of claim 1 wherein the plasma contains oxygen.

5. The plasma etching process of claim 1 wherein the plasma contains hydrogen.

6. The plasma etching process of claim 5 wherein the hydrogen containing plasma is derived at least in part from H_2.

7. The plasma etching process of claim 5 wherein the hydrogen containing plasma is derived at least in part from NH_3.

8. The plasma etching process of claim 5 wherein the carbon containing material comprises a polymer.

9. The plasma etching process of claim 1 wherein the plasma is predominately comprised of hydrogen.

10. The plasma etching process of claim 1 further comprising after said plasma etching, further plasma etching using a gas comprising chlorine.

11. The plasma etching process of claim 10 further comprising after said plasma etching, further plasma etching using a gas comprising a mixture of chlorine and hydrogen.

12. The plasma etching process of claim 10 further comprising after said plasma etching, further plasma etching using a gas comprising a mixture of Cl_2 and H_2.

13. The plasma etching process of claim 10 wherein the chlorine is derived at least in part from Cl_2.

14. The plasma etching process of claim 10 wherein the chlorine is derived at least in part from HCl.

15. A plasma etching process comprising:

forming a masking layer over a substrate;

patterning the masking layer to form openings therein;

first etching material beneath the masking layer through the openings;

after the first etching, removing the masking layer from the substrate; and

after the removing and before subsequently depositing any material over the substrate, plasma etching the substrate at a temperature of at least 400°C.

16. The plasma etching process of claim 15 wherein the plasma comprises oxygen.

17. The plasma etching process of claim 15 wherein the plasma comprises hydrogen.

18. The plasma etching process of claim 17 wherein the hydrogen containing plasma is derived at least in part from H_2.

19. The plasma etching process of claim 17 wherein the hydrogen containing plasma is derived at least in part from NH_3.

20. The plasma etching process of claim 15 wherein the plasma is predominately comprised of hydrogen.

21. The plasma etching process of claim 15 wherein the temperature is at least 600°C.

22. The plasma etching process of claim 15 wherein the first etching leaves a residue at least partially over the substrate, the plasma etching removing the residue from the substrate.

23. The plasma etching process of claim 15 comprising after the removing and before subsequently depositing any material over the substrate, conducting at least two plasma etchings using different reactive gas chemistries, one of the at least two plasma etchings being said plasma etching at a temperature of at least 400°C, another of the at least two plasma etchings being subsequent to the one and using a gas chemistry comprising chlorine.

24. The plasma etching process of claim 23 wherein the another plasma etching is conducted at a temperature of at least 400°C.

25. A semiconductor plasma etching process comprising:

first etching material from a substrate and forming an undesired residue at least partially over the substrate during the first etching; and

after the first etching and before subsequently depositing any material over the substrate, plasma etching the undesired residue from the substrate.

26. The plasma etching process of claim 25 wherein the first etching comprises dry etching.

27. The plasma etching process of claim 25 wherein the first etching comprises wet etching.

28. The plasma etching process of claim 25 wherein the residue comprises a carbon containing polymer.

29. The plasma etching process of claim 25 wherein the residue is not a polymer.

30. The plasma etching process of claim 25 wherein the plasma etching is conducted at a temperature of at least 400°C.

31. The plasma etching process of claim 25 wherein the plasma etching is conducted at a temperature of at least 600°C.

32. The plasma etching process of claim 25 wherein the plasma etching is conducted substantially selective to remove the residue relative to all other exposed material of the substrate.

33. The plasma etching process of claim 25 wherein the residue comprises a carbon containing polymer, and the plasma etching is conducted at a temperature of at least 400°C.

34. The plasma etching process of claim 25 wherein the residue comprises a carbon containing polymer, and the plasma etching is conducted at a temperature of at least 600°C.

35. A plasma etching process comprising:

forming a photoresist layer over a semiconductor substrate;

patterning the photoresist layer to form openings therethrough;

dry etching a first layer immediately beneath the photoresist layer through the openings and forming a carbon containing polymer residue at least partially over the substrate during the first etching;

after the dry etching, removing the photoresist layer from the substrate; and

after the removing and before subsequently depositing any material over the substrate, plasma etching the carbon containing polymer residue from the substrate substantially selectively relative to the first layer.

36. The plasma etching process of claim 35 wherein the plasma etching is conducted at a temperature of at least 400°C.

37. The plasma etching process of claim 35 wherein the plasma etching is conducted at a temperature of at least 600°C.

38. The plasma etching process of claim 35 wherein the plasma comprises oxygen.

39. The plasma etching process of claim 35 wherein the plasma comprises hydrogen.

40. The plasma etching process of claim 39 wherein the plasma is derived at least in part from H_2.

41. The plasma etching process of claim 39 wherein the plasma is derived at least in part from NH_3.

42. A chemical vapor deposition process of depositing a material over a semiconductor substrate comprising:

positioning a semiconductor substrate within a plasma enhanced chemical vapor deposition reactor;

plasma etching the substrate within the reactor using a first gas chemistry; and

after the plasma etching, chemical vapor depositing a material over the semiconductor substrate within the reactor using a second gas chemistry without removing the substrate from the reactor between the etching and the depositing.

43. The plasma etching process of claim 42 wherein the plasma etching and the depositing are conducted at subatmospheric pressure, the substrate not being exposed to atmospheric pressure intermediate the plasma etching and the depositing.

44. The plasma etching process of claim 42 wherein the plasma etching is conducted at a temperature of at least 400°C.

45. The plasma etching process of claim 42 wherein the plasma etching is conducted at a temperature of at least 600°C.

46. The plasma etching process of claim 42 wherein the first chemistry comprises oxygen.

47. The plasma etching process of claim 42 wherein the first chemistry comprises hydrogen.

48. The plasma etching process of claim 42 wherein the substrate has a residue formed at least partially thereover the result of previous processing, the plasma etching removing the residue from the substrate.

49. The plasma etching process of claim 42 wherein the substrate has a carbon containing polymer formed at least partially thereover, the plasma etching removing the carbon containing polymer from the substrate.

50. The plasma etching process of claim 42 wherein the substrate has a carbon containing polymer residue formed at least partially thereover the result of previous processing, the plasma etching removing the carbon containing polymer residue from the substrate.

51. The plasma etching process of claim 42 comprising plasma etching the substrate within the reactor using another gas chemistry different from the first and second gas chemistries intermediate the plasma etching with the first gas chemistry and the depositing.

52. The plasma etching process of claim 51 wherein the another gas chemistry comprises chlorine.

53. The plasma etching process of claim 52 wherein the another gas chemistry comprises hydrogen.

54. A method of forming a conductive contact comprising:

forming an insulative material over a silicon comprising substrate;

forming an opening into the insulative material over a node location on the silicon comprising substrate to which electrical connection is desired;

first plasma etching within the opening using a gas chemistry comprising hydrogen and exposing silicon of the substrate to said plasma hydrogen;

after the first plasma etching, second plasma etching within the opening using a gas chemistry comprising chlorine; and

after the second plasma etching, forming a silicide material within the opening in contact with silicon of the substrate.

55. The method of claim 54 wherein the silicide material is formed by refractory metal deposition and anneal.

56. The method of claim 54 wherein the silicide material is formed by chemical vapor deposition of the silicide material.

57. The method of claim 54 wherein the gas chemistry comprising hydrogen comprises H_2.

58. The method of claim 54 wherein the gas chemistry comprising chlorine comprises Cl_2.

59. The method of claim 54 wherein the gas chemistry comprising chlorine comprises HCl.

60. The method of claim 54 wherein the first plasma etching, the second plasma etching, and at least some of the silicide material forming all occur in the same chamber.